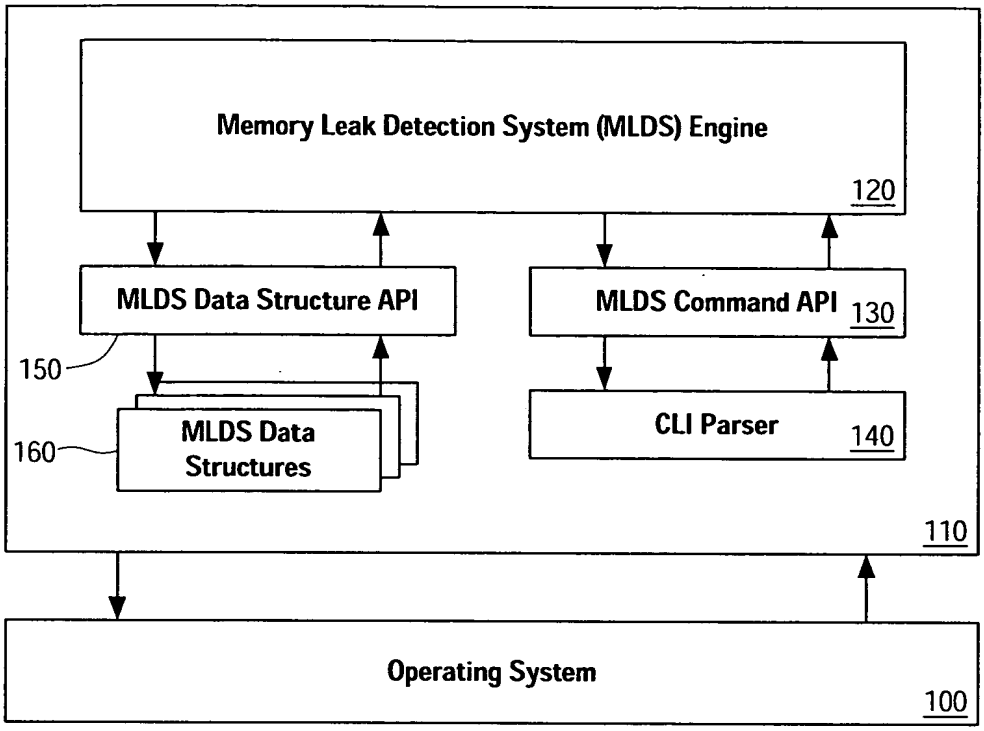
Memory Leak Detection System (MLDS) Engine
120
MLDS Data Structure API
MLDS Command API
130
150
160
MLDS Data Structures
CLI Parser
140
110
Operating System
100

FIG. 1

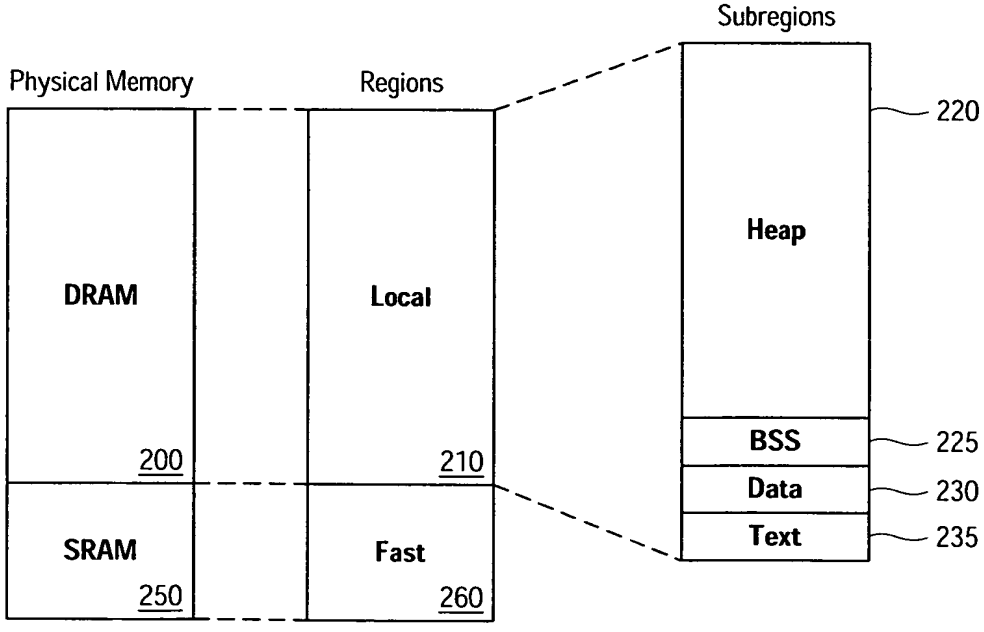
Physical Memory
Regions
Subregions
DRAM
200
Local
210
Heap
220
BSS
225
Data
230
Text
235
SRAM
250
Fast
260

FIG. 2

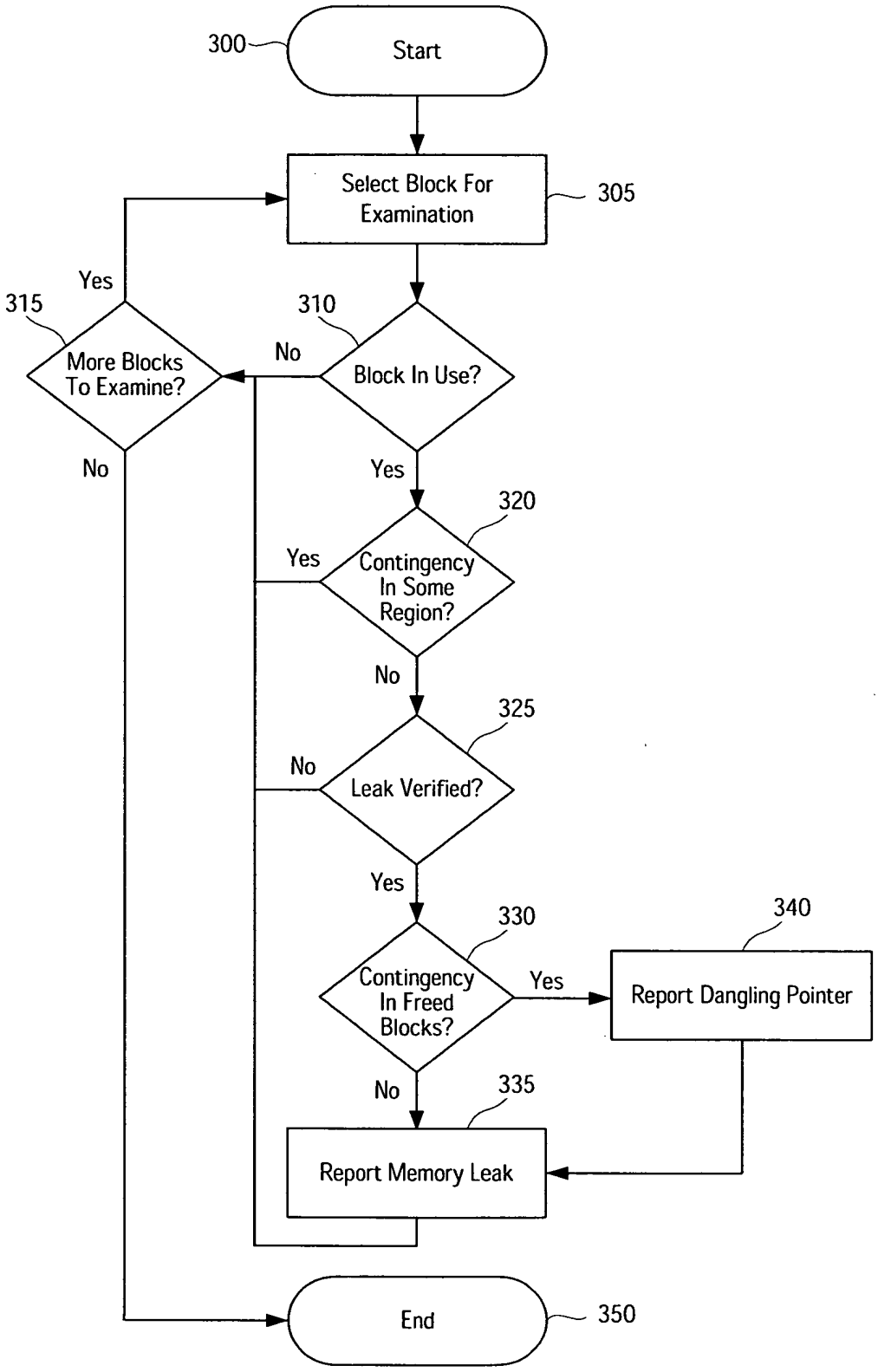
300
Start
Select Block For Examination
305
Yes
315
More Blocks To Examine?
No
310
Block In Use?
No
Yes
320
Contingency In Some Region?
Yes
No
325
Leak Verified?
No
Yes
330
Contingency In Freed Blocks?
Yes
340
Report Dangling Pointer
No
335
Report Memory Leak
End
350

FIG. 3

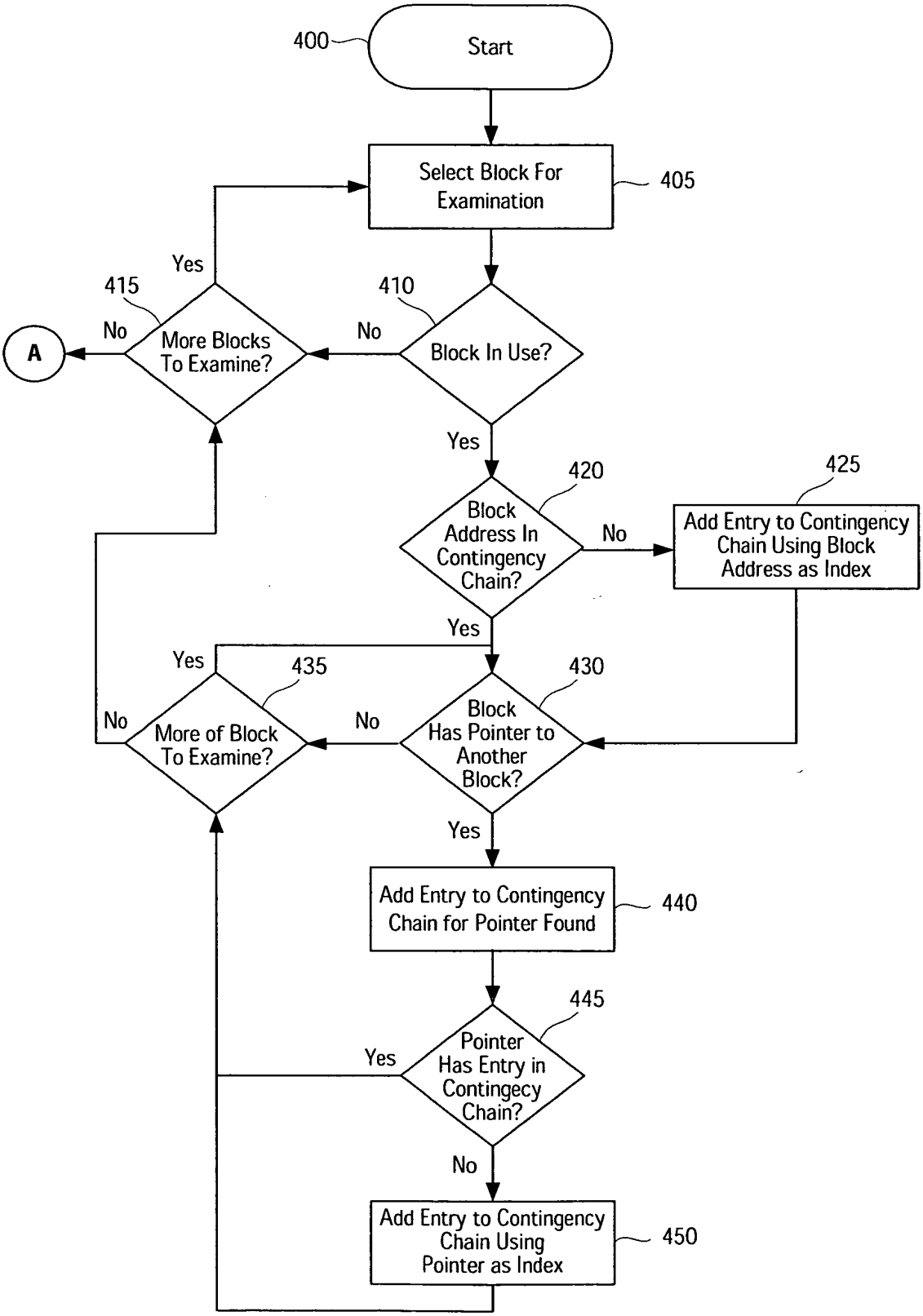
400
Start
Select Block For Examination
405
Yes
415
More Blocks To Examine?
No
A
410
Block In Use?
No
Yes
420
Block Address In Contingency Chain?
No
425
Add Entry to Contingency Chain Using Block Address as Index
Yes
Yes
435
More of Block To Examine?
No
430
Block Has Pointer to Another Block?
No
Yes
Add Entry to Contingency Chain for Pointer Found
440
445
Pointer Has Entry in Contingecy Chain?
Yes
No
Add Entry to Contingency Chain Using Pointer as Index
450

FIG. 4

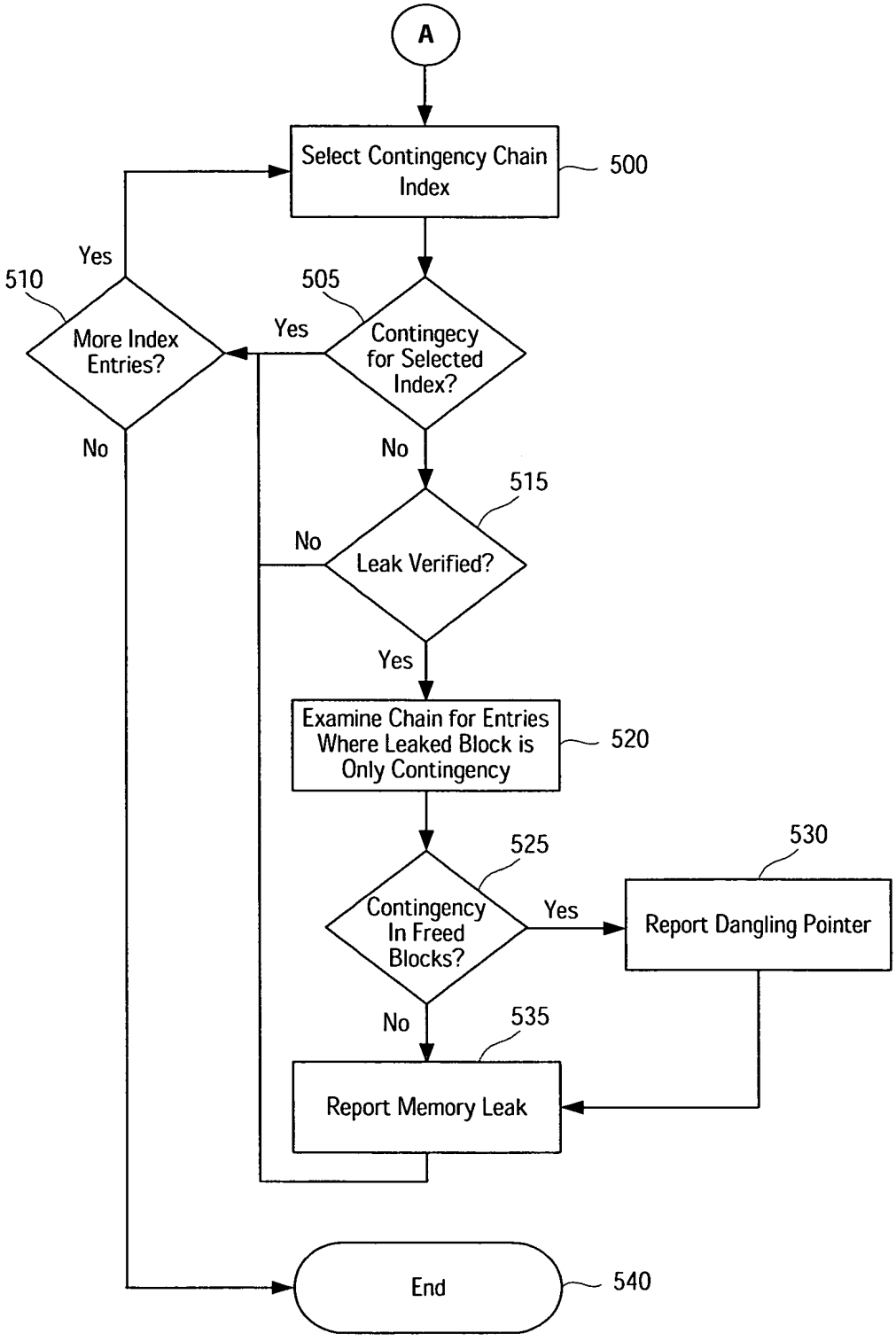
A
Select Contingency Chain Index
500
505
Contingecy for Selected Index?
Yes
510
More Index Entries?
Yes
No
No
515
Leak Verified?
No
Yes
Examine Chain for Entries Where Leaked Block is Only Contingency
520
525
Contingency In Freed Blocks?
Yes
530
Report Dangling Pointer
No
535
Report Memory Leak
End
540

FIG. 5

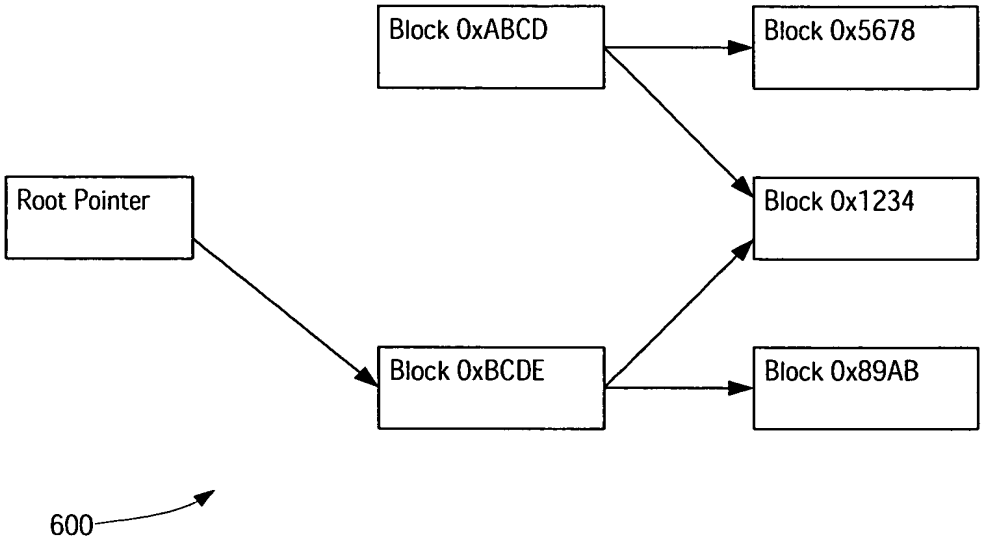

FIG. 6A

650

Index	Content (Contingencies)
Block 0xABCD	null
Block 0x1234	0xABCD, 0xBCDE
Block 0x5678	0xABCD
Block 0xBCDE	root
Block 0x89AB	0xBCDE

FIG. 6B

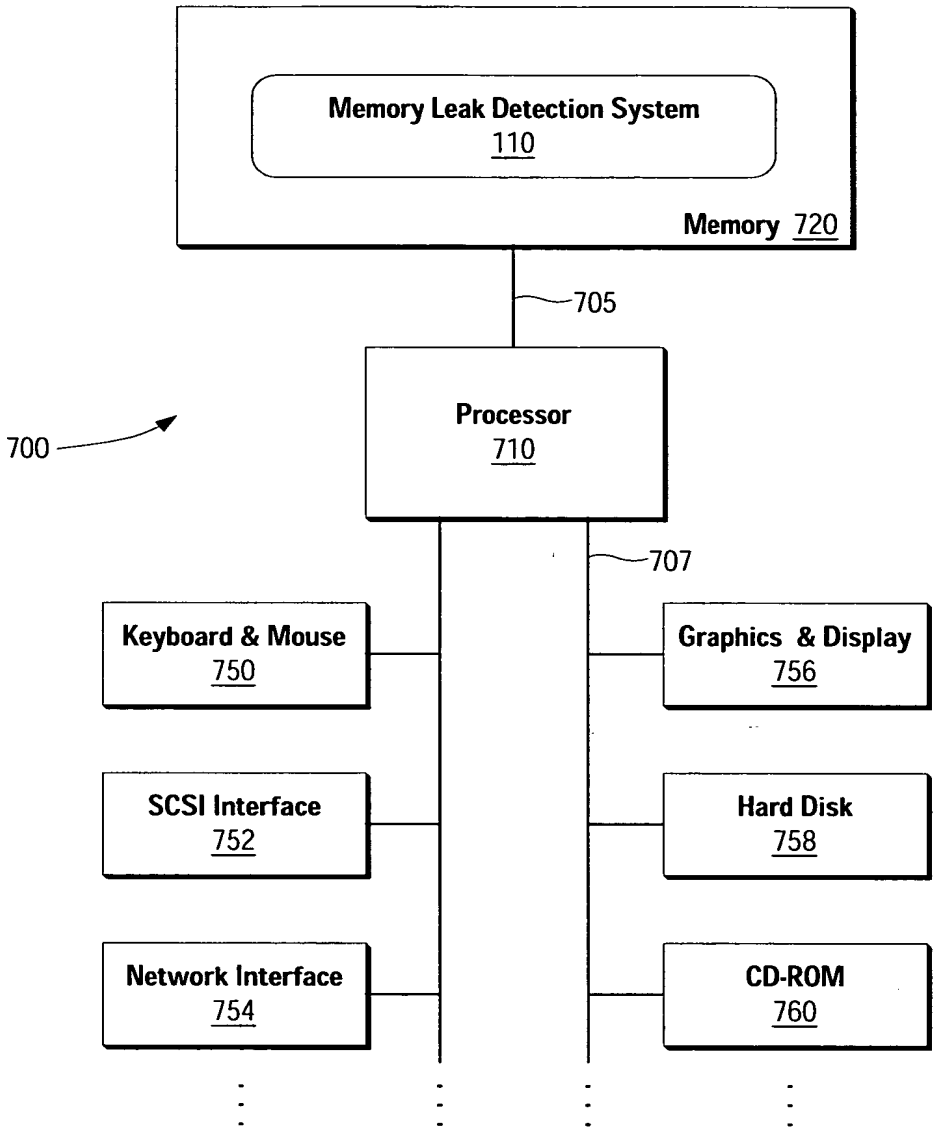
Memory Leak Detection System
110
Memory 720
705
700
Processor
710
707
Keyboard & Mouse
750
Graphics & Display
756
SCSI Interface
752
Hard Disk
758
Network Interface
754
CD-ROM
760

FIG. 7